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# LEANBH Project

**Learning to Evaluate Blood  
Pressure at Home**



INFANT Research Seminar Series

## Four steps to designing research with real impact

*Challenging our Thinking*

7<sup>th</sup> October, 2016  
CUMH, Cork

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# Presentation

Goal: To challenge participants to think not just in terms of their research but the *impact* that they seek to make through this research ...

Content:

- Research for Impact
- Some observations
- Designing for Impact
  - Step 1 - The ‘*Why*’ Question
  - Step 2 - The ‘*What*’ Question
  - Step 3 - The ‘*Wow*’ Question
  - Step 4 - The ‘*How*’ Question



**Stretching our innovation thinking ...**

# **Research is for Impact**

**Importance of Research Impact**

# Two Types of Impacts from Research ...

Academic impact is the “*demonstrable contribution that excellent research makes to academic advances, across and within disciplines, including significant advances in understanding, methods, theory and application.*”



Research impact is “*the demonstrable contribution that research makes to the economy, society, culture, ... the environment, or quality of life, beyond contributions to academia*”.



**Australian Government**  
**Australian Research Council**



# Importance of Research Impact ...

*“As with all public spending it is both desirable and necessary to show value for money and within this demonstrate and articulate the impact and benefits of scientific research projects. In the current climate of constrained public spending there is an even greater focus on demonstrating the economic, social and cultural benefits of publicly-funded scientific research to the wider society ...”.*

***“SFI will continue to focus on scientific excellence but will now apply an equal focus on impact ... and will use experts in the translation, commercialisation and development of scientific research to evaluate research impact as an important and integral part of our review processes”***



Prof Mark Ferguson, Director General, Science Foundation Ireland - UL Research Impact

Watch at ... <https://www.youtube.com/watch?v=XmSaWs1mCdA>



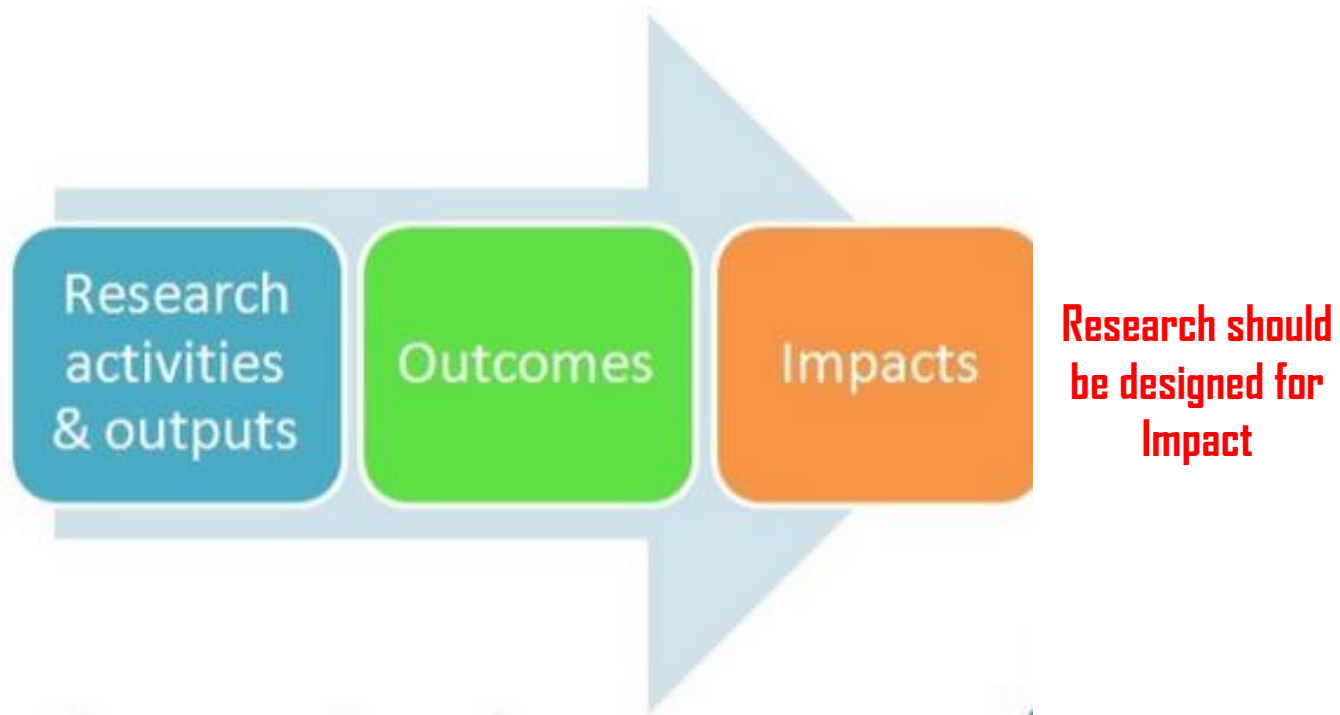
# Research Impact Statements ...

*“**Impact statements** should be written primarily in lay non-technical language, be as specific and comprehensive as possible and cover potential impacts by answering the following questions:*

- ***Who will benefit from this research?***
- ***How will they benefit from this research?***



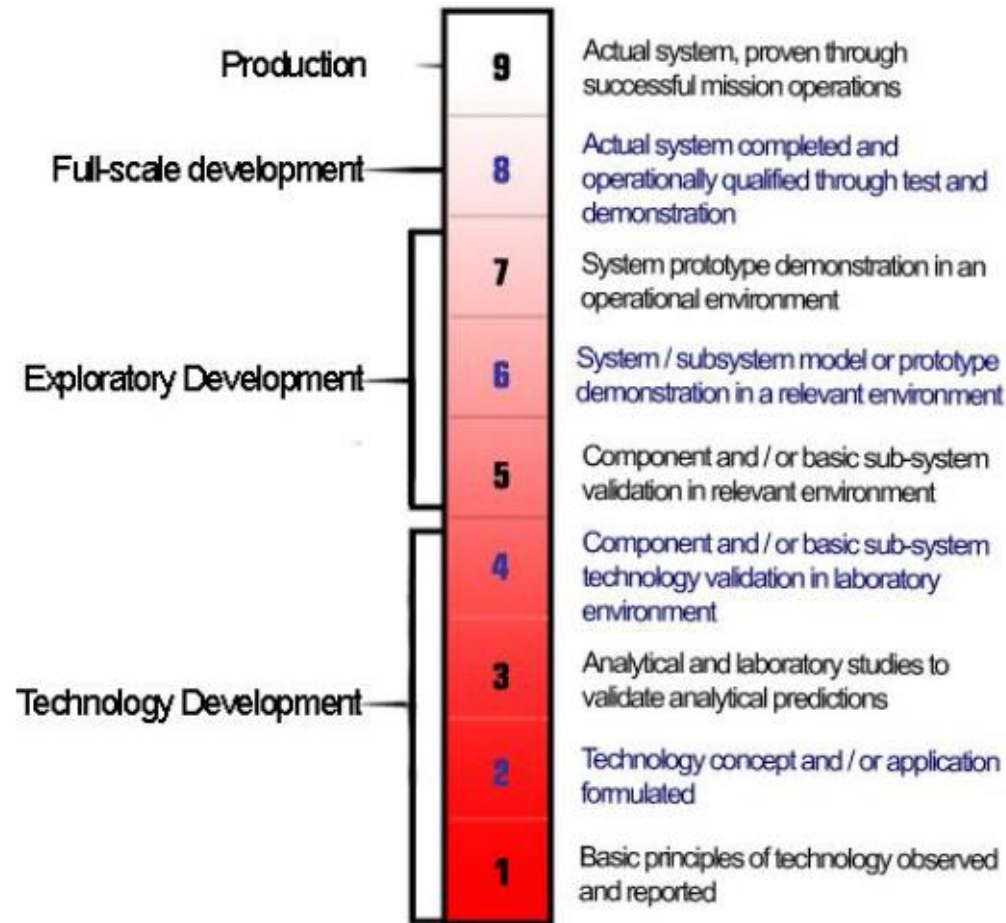
# We need to design research with impact ...



# Measuring Impact Levels ...

Technology Readiness Levels are a measure of the maturity or proximity to market of a technology. Lower TRLs (1-3) include demonstration of basic principles through to proof of concept. Medium TRLs (4-7) span technology validation and prototype demonstration and higher TRLs (8-9) refer to pre-commercial deployment up to market introduction.

## R&D - Technology Readiness Mapping



# Measuring Impact Levels ...

## Technology Readiness Level (TRL)

Where a topic description refers to a TRL, the following definitions apply, unless otherwise specified:

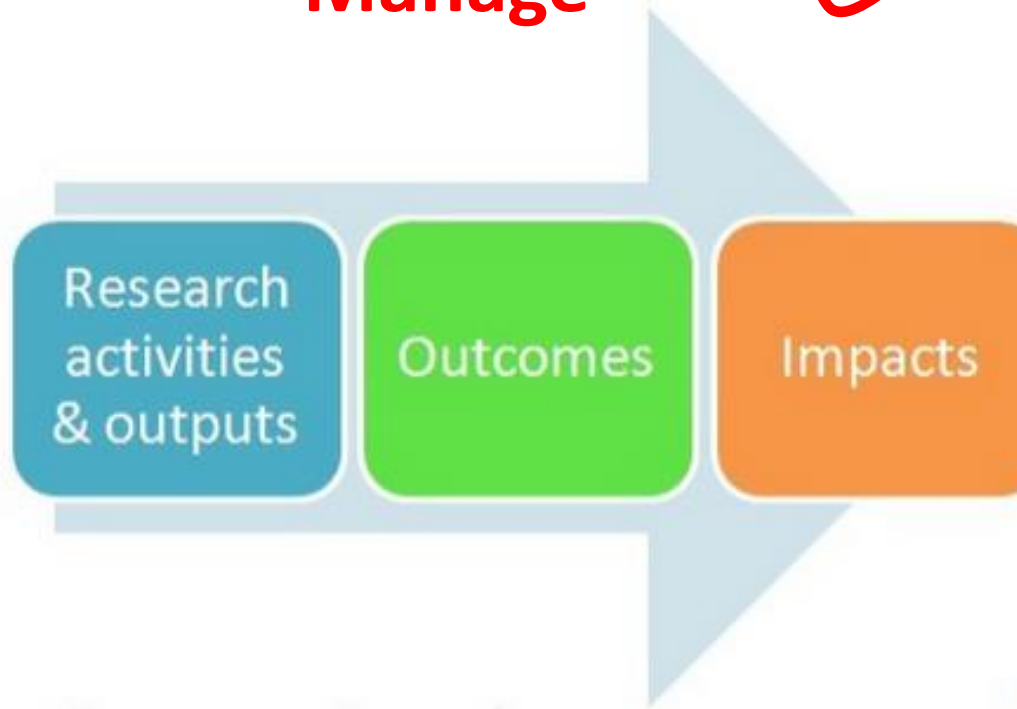
- TRL 1 – basic principles observed
- TRL 2 – technology concept formulated
- TRL 3 – experimental proof of concept
- TRL 4 – technology validated in lab
- TRL 5 – technology validated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 6 – technology demonstrated in relevant environment (industrially relevant environment in the case of key enabling technologies)
- TRL 7 – system prototype demonstration in operational environment
- TRL 8 – system complete and qualified
- TRL 9 – actual system proven in operational environment (competitive manufacturing in the case of key enabling technologies; or in space)

# Measuring Impact Levels ...

SFI Research Centres (RCs). These centres should continue on their existing trajectory, continuing to build strategic linkages with enterprise at the TRL1-4. The RC's main focus will continue to be on oriented basic and short and medium term problem driven research, academic led and industry informed, with industry influence achieved through collaborative research projects, funded through both the Centre and the Spokes funding programmes.

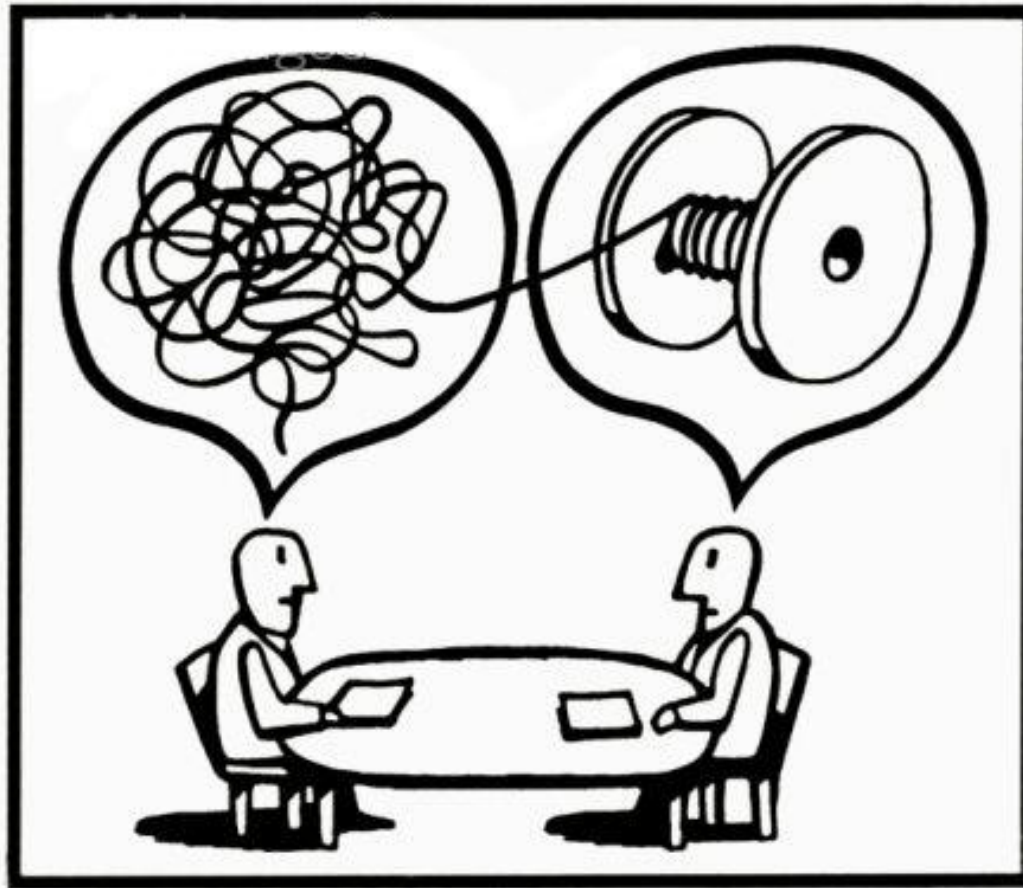
# We need to manage delivery of impact ...

Execute &  
Manage



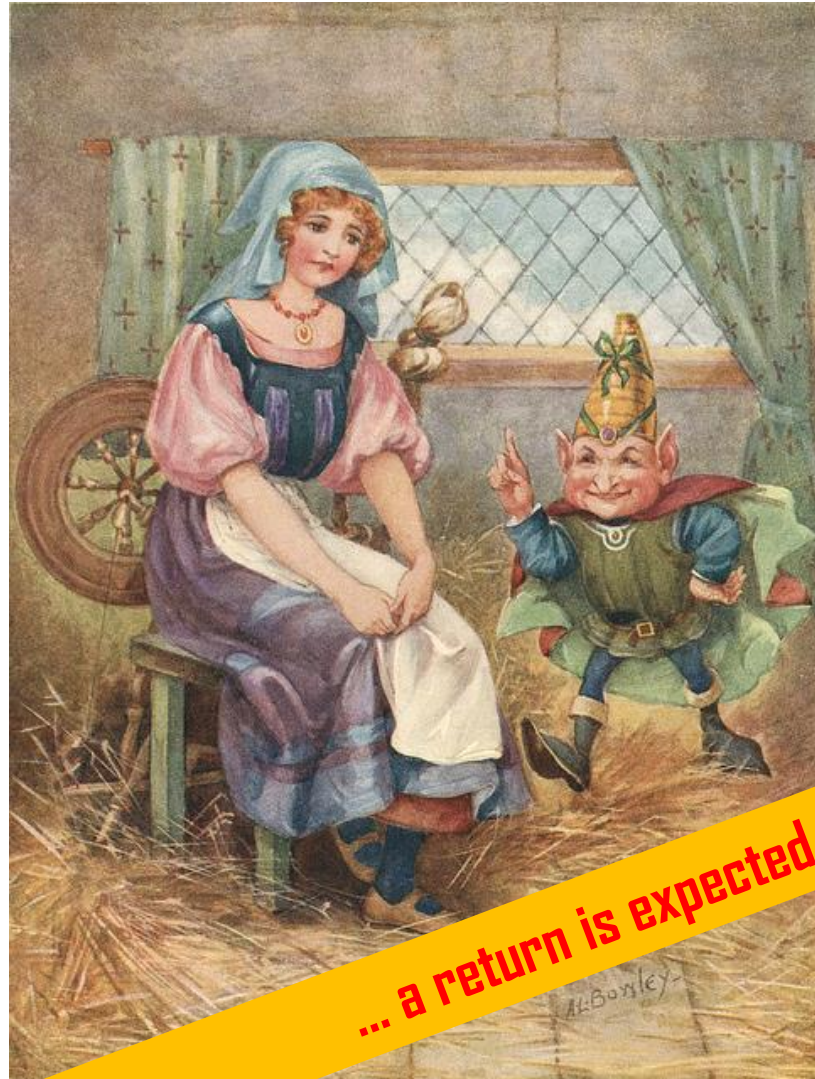
Research should  
deliver impact'

# We need to communicate research impact ...





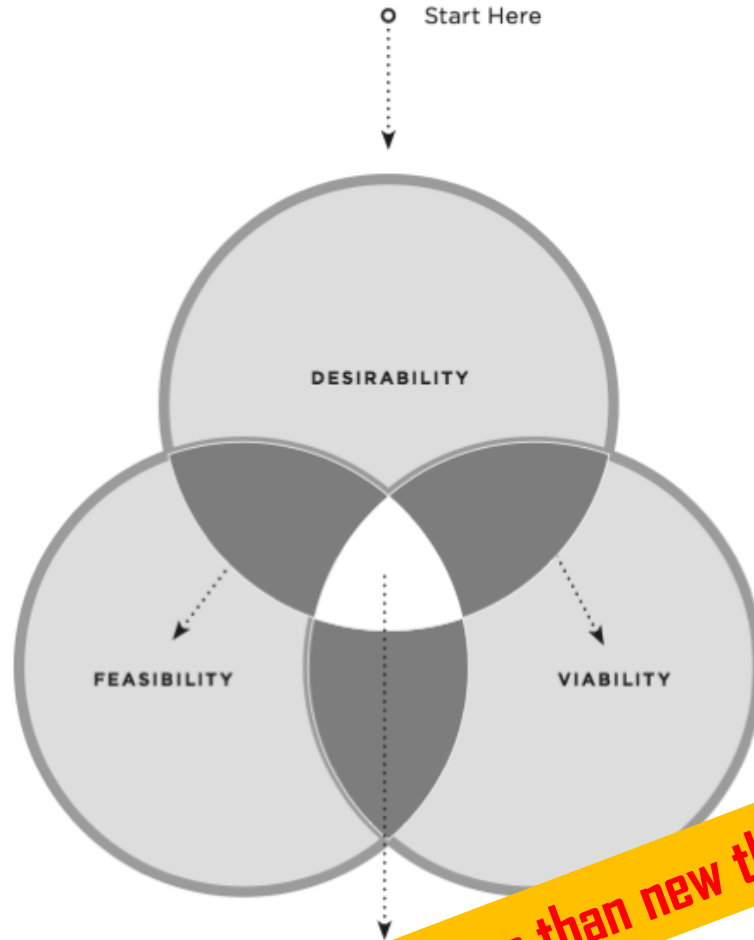
# Gifts come at a price ...



... a return is expected ....

**Bringing a new mindset**

# Innovation is about finding ...



... this is more than new things ....

The goal of the Human-Centered Design process is the overlap of these three lenses; they need to be Desirable, Feasible, and Viable.

Source : [www.ideo.com](http://www.ideo.com)

# Science has a role but ...



**... doesn't mean it must be a leading role ....**

# Just because a dog can jump ...



**Doesn't mean everyone wants a ....**

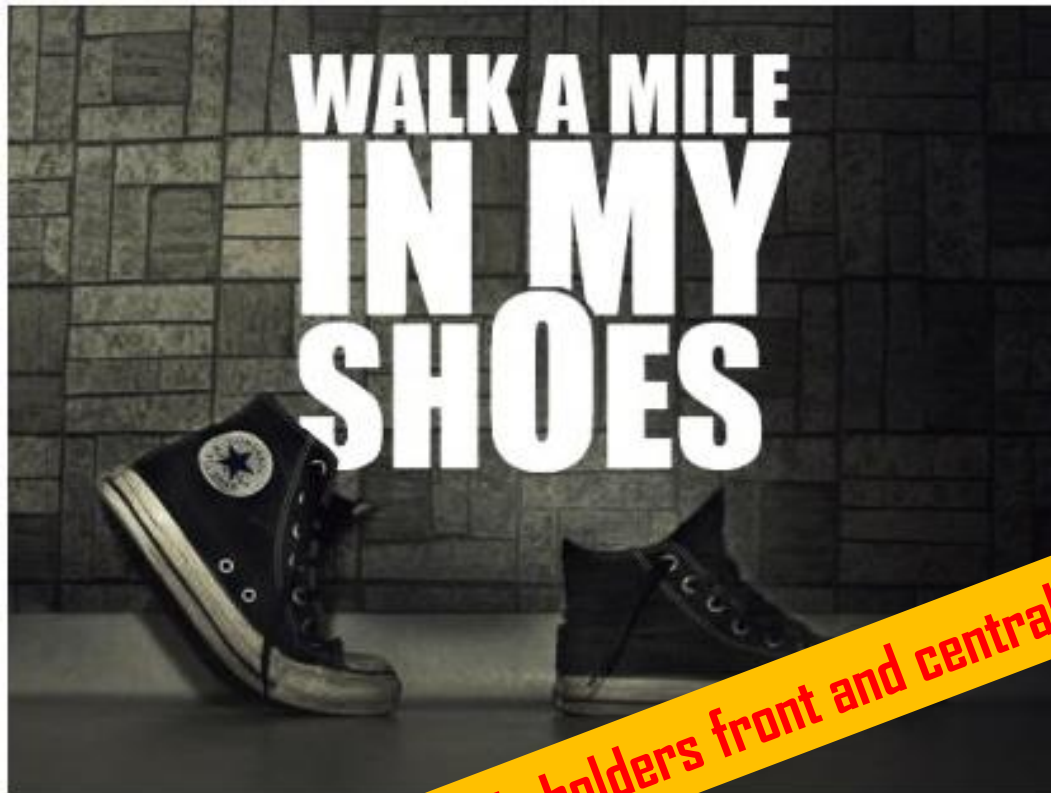


# Where is the environment ...





# Where are the stakeholders



**Stakeholders front and central ....**

# Where is the diversity ...

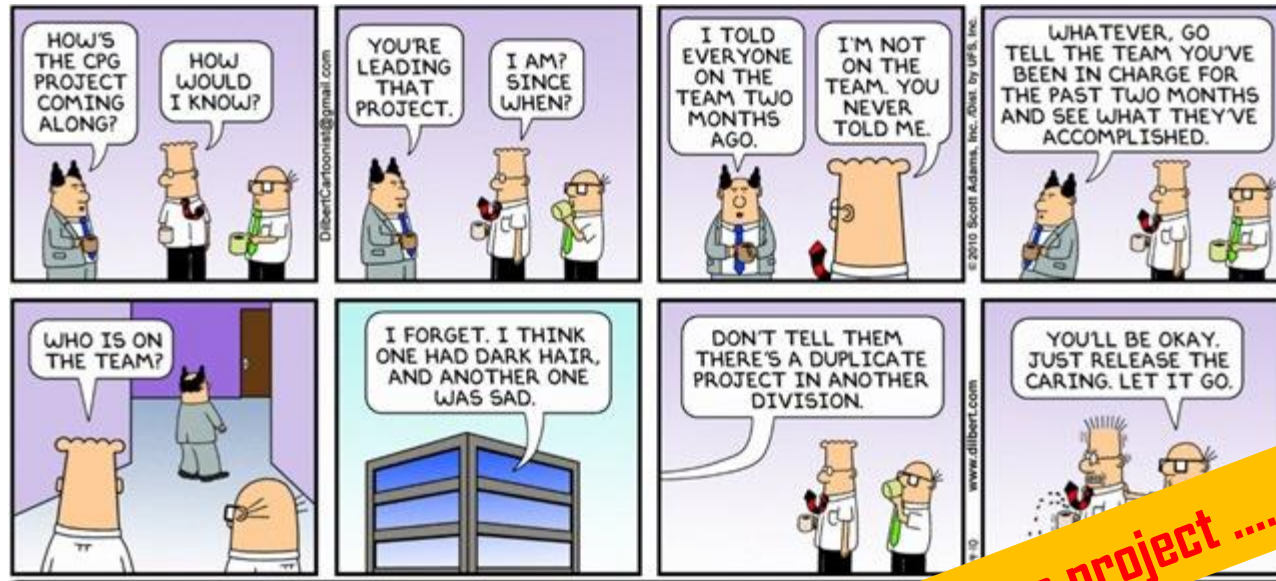
*Where all think alike,  
no one thinks very much.*



Walt Lippmann

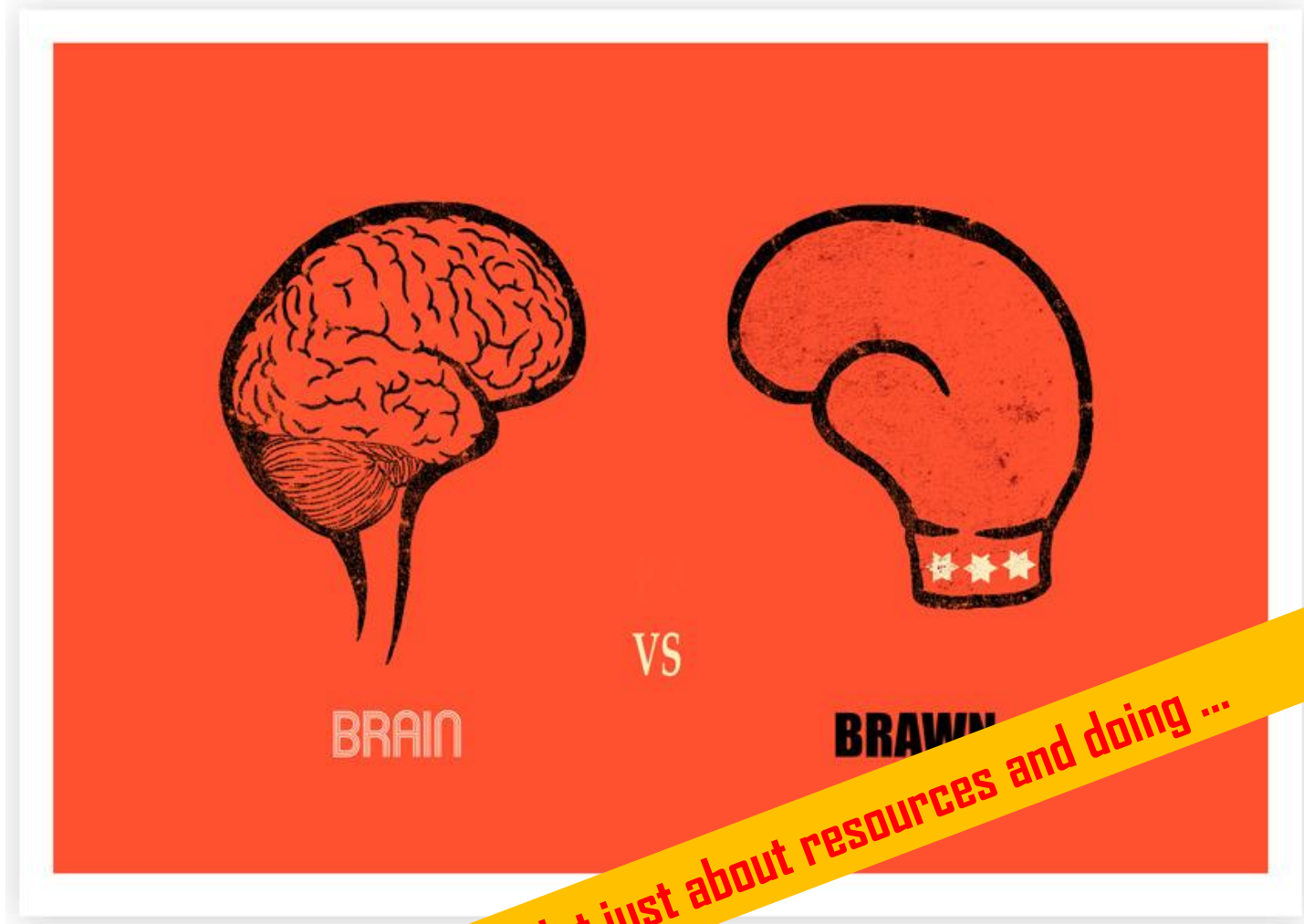
**... we need to hear different voices ....**

# Where is the project management ...



**PM is more than a bolt-on to a project ....**

# Brains from brawn ...



**Not just about resources and doing ...**

d set

# Focusing on points of failure

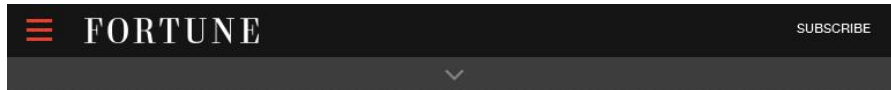


The jet black swan has arrived at an ancient swannery in Dorset and set up home with the resident 600 swans - which are all white

**Zero in on the likely points of failure**



# Evaluating our thinking



INNOVATION

## Why most innovations are great big failures

by Anne Fisher    @anbfisher    OCTOBER 7, 2014, 2:27 PM EDT



Photo: Don Farrall—Getty Images

Companies usually come up with new ideas for products, but often the tough issues last.

Mark Payne (Fahrenheit 212) advocates “*exposing fledgling innovation ideas to the tough love of tough questions ... ensures those ideas can survive in the real world of real companies placing real bets with real money.*”

Most innovations fail because their creators didn’t ask tough questions at the outset.

Payne recommends “*working out the nitty-gritty of practical details, even if it means*

*working up the issues that will kill a project now, rather than discovering them later.*”

**Ask the hard questions early**



# Creating a bias for doing ...



# Innovation involves risk ...



***“The biggest risk is not taking any risk... In a world that is changing really quickly, the only strategy that is guaranteed to fail is not taking risks.”***

***- Mark Zuckerberg***

**We need to be open to 'controlled' failure**

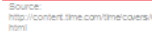
# Designing for Research Impact

The search for impact

# Designing for Research Impact

## So What?

**Why?** It is a game about imagination, whose purpose is to think expansively around an ideal future state for the organization; it's an exercise in visioning the future impact of an opportunity. This game is worth playing because it not only encourages people to "think big," but also actually plants the seeds for a future that perhaps wasn't possible before the game was played.



## So What?



Title \_\_\_\_\_  
Location \_\_\_\_\_

**Location** —

Paragraph 1,

5 W's: Who,  
Where, Why

About/Bio -

[About/bio](#) - [Contact Data](#)



**Why?** This game encourages conversation about what really matters. It constrains conversation to a specific format to boost productivity of discussion. It creates a common, tagline touchstone that communicates a shared product vision.

2009

# STEP 1

# Research Game: Design the Press Release



Date/Timing  
Release Date

Title

Location

Paragraph 1/Intro

5 W's: Who, What,  
Where, Why, When

About/Bio

Contact Details

**PRESS RELEASE**

6th January, 2009  
FOR IMMEDIATE RELEASE  
33 TOP WEBSITE TIPS  
Sydney, Australia

ORBITAL's follow-up to their new website and short single 'CHIME' is released on PAPER records by 10th September.

Their name derives as much from the fact that they live on (well, not actually 'on') the NET as from the orbital new wave.

Between Phil and Paul (Hawthorn) are ORBITAL and have been experimenting on their 4-track tape machines at home for only about 12 months. No experiments were made to their first single 'CHIME' which really just shows steady progress in what as it was simply a side of the line time involved plus the cost of the tape itself.

After the success of 'CHIME' the boys were able to buy better equipment, including their follow-up 'ORION' is of a higher technical quality, but the single was still made in their living room and then mastered at Sun Theatre Studios in London.

Unlike many other bands ORBITAL are quite active on the live scene, enjoying playing live so much that they often lose money through playing venues that are off the beaten track.

Phil and Paul are obsessive in their love of the difference between a professional band and a 4-track. It isn't particularly interesting to watch but because they play their music so positive and happy (rather than using words with a lot of emotion) it requires a real amount of time to produce with song structure, timing techniques and sound manipulation.

"We would prefer to be in the background playing their unknown from the DJ (unannounced as people just love our music rather than expect an something else)" explained Phil, who with his brother Paul is currently experimenting with other visual mediums such as film and light that are complementary to their music.

ORBITAL are keeping a low profile just now so as to give their time to work on the band and on their forthcoming debut album.

ORBITAL - Aural & Visual experiments





# Translate the Vision to 'The What?'

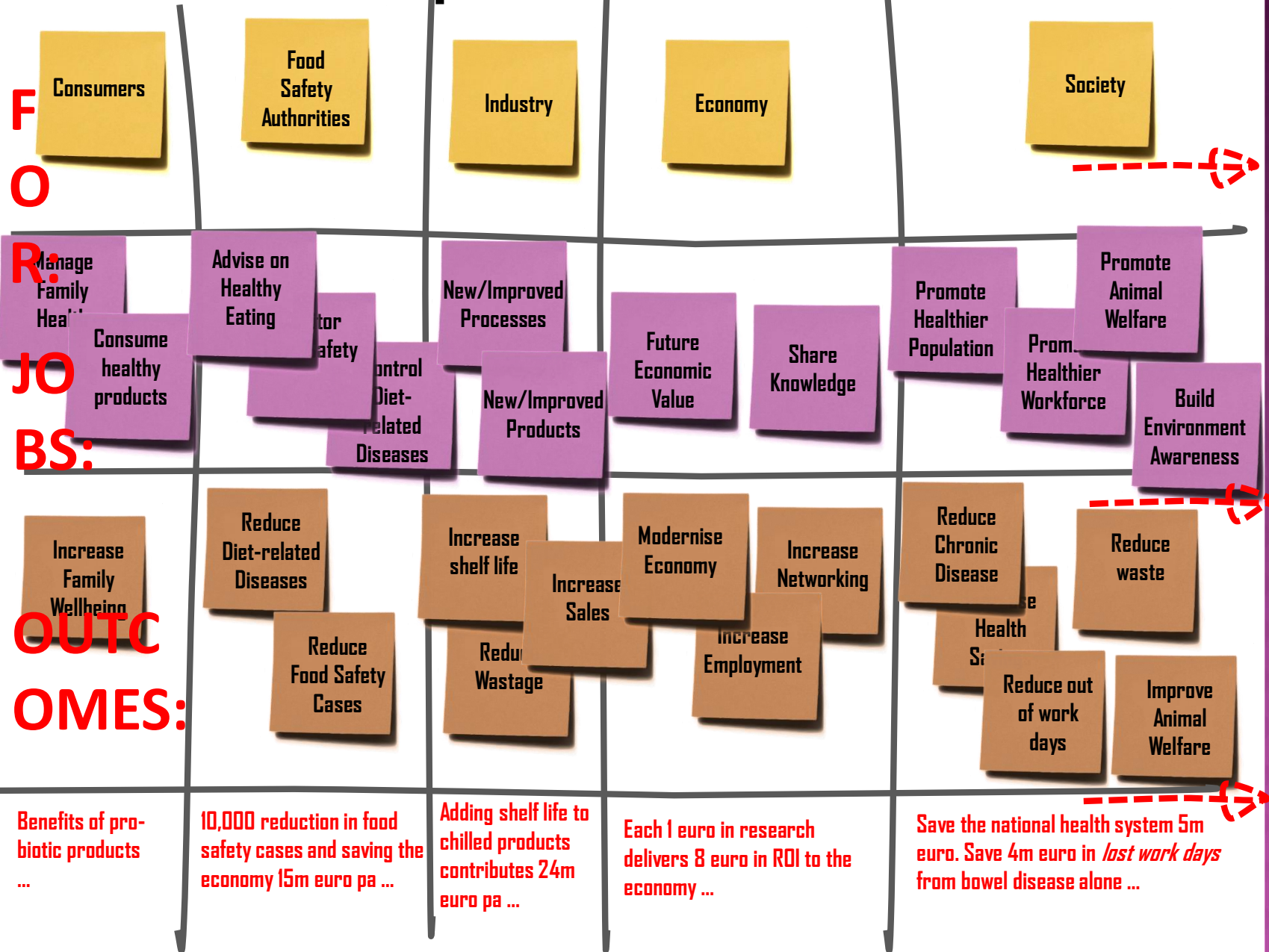
BENEFA  
CTOR 1

BENEFAC  
TOR 2






# Example - Microbiota Research



# Drill from 'The What' into 'The Wow?'

**Research Game: Creating a Research Value Proposition**

 20 min.

My research provides:

To:

In order to:


That is different in that:

*Outputs*

*Stakeholder(s)*

*Purpose of outputs*

*Differentiators*



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**Wow?**

**Research Purpose**

The title of my research is:

My research addresses the question of:

*Research Title*

*Research Question*

**RXF Worksheet**

**Impact**

If successful the impact of the research will be to:

Even if unsuccessful the impact of the research will still be to:

The limitations of my research are:

*Impact factors*

*Future Directions*

**RXF Worksheet**

**Lessons Learnt**

What I learnt most from my research was:

What others can learnt most from my research is:

*Personal Lessons*

*External Lessons*

**RXF Worksheet**

**STEP 3**

# Research Game: Extracting the Research Value Proposition



Our research provides:

*Outputs*

To:

*Stakeholder(s)*

In order to:

*Purpose of outputs*

That is different in that:

*Differentiators*



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# Finally move to ‘The How?’

## Research Game: Plan your Pathway to Value ...



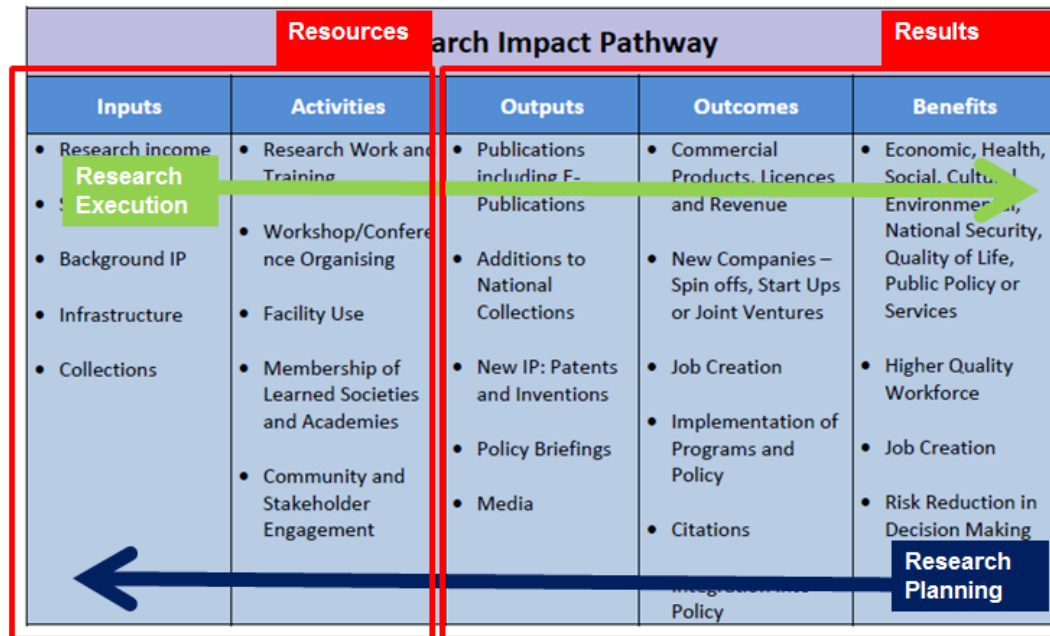
Resources		Research Impact Pathway			Results
Inputs	Activities	Outputs	Outcomes	Benefits	
<ul style="list-style-type: none"><li>Research Income</li><li>Research Execution</li><li>Background IP</li><li>Infrastructure</li><li>Collections</li></ul>	<ul style="list-style-type: none"><li>Research Work and Training</li><li>Workshop/Conference Organizing</li><li>Facility Use</li><li>Membership of Learned Societies and Academies</li><li>Community and Stakeholder Engagement</li></ul>	<ul style="list-style-type: none"><li>Publications including Pre-Publications</li><li>Additions to National Collections</li><li>New IP: Patents and Inventions</li><li>Policy Briefings</li><li>Media</li></ul>	<ul style="list-style-type: none"><li>Commercial Products, Licenses and Revenue</li><li>New Companies – Spin-offs, Start Ups or Joint Ventures</li><li>Job Creation</li><li>Implementation of Programs and Policy</li><li>Citations</li></ul>	<ul style="list-style-type: none"><li>Economic, Health, Social, Cultural, Environmental, National Security, Quality of Life, Public Policy or Services</li><li>Higher Quality Workforce</li><li>Job Creation</li><li>Risk Reduction in Decision Making</li></ul>	
					Research Planning



How?

STEP 4

# Research Game: Plan your Pathway to Value ...



Prompt:  
Start at the right  
(with the  
benefits) and  
work left ...









Moving from 'playing not to lose' to  
'playing to win'

*Doing things right versus doing the right things.*

# Many Thanks

 [p.oreilly@ucc.ie](mailto:p.oreilly@ucc.ie)  
 <https://ie.linkedin.com/in/paidioreilly>

Source: <http://funnyshit.com.au/img/not-my-job-redux.jpg>

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